

Listing of Claims:

Claim 1 (Original): A method for displaying digital interface symbol information from at least one analog signal, the digital interface symbol information including encoded symbols and decoded information, the method comprising:

capturing a set of data samples of the at least one analog signal at a frequency at least as high as the switching rate of the at least one analog signal;
converting the set of data samples into at least one serial bit stream using a clock;
searching the at least one serial bit stream for one or more sync symbols;
identifying the encoded symbols in the at least one serial bit stream using the sync symbols; and
displaying at least some of the digital interface symbol information with a representation of the at least one analog signal in a correlated fashion.

Claim 2 (Original): The method of claim 1, further comprising decoding the encoded symbols into the decoded information.

Claim 3 (Original): The method of claim 1, wherein the frequency of the capturing step is at least eight times as high as the switching rate of the at least one analog signal.

Claim 4 (Original): The method of claim 1, further comprising recovering the clock from the at least one analog signal, the clock being an electronic signal.

Claim 5 (Original): The method of claim 4, wherein the recovering step is accomplished by way of an analog hardware phase-locked loop (PLL).

Claim 6 (Original): The method of claim 4, wherein the recovering step is accomplished by way of a digital hardware PLL.

Claim 7 (Original): The method of claim 1, further comprising recovering the clock from the set of data samples, the clock being a list of locations in time relative to the set of data samples.

Claim 8 (Original): The method of claim 7, wherein the recovering step is accomplished by a software PLL.

Claim 9 (Original): The method of claim 1, wherein the digital interface symbol information displayed by the displaying step are encoded symbols.

Claim 10 (Original): The method of claim 2, wherein the digital interface symbol information displayed by the displaying step is decoded information.

Claim 11 (Original): The method of claim 1, wherein the encoded symbols comprise 10-bit symbols of an 8b/10b encoded interface.

Claim 12 (Original): The method of claim 2, wherein the decoded information comprises 8-bit data values and command codes of an 8b/10b encoded interface.

Claim 13 (Original): The method of claim 1, further comprising searching the digital interface symbol information for preselected symbol information.

Claim 14 (Original): The method of claim 1, further comprising triggering storage of the set of data samples based upon matching all or part of preselected symbol information with the digital interface symbol information.

Claim 15 (Original): The method of claim 14, wherein the triggering step also repositions the digital interface symbol information and the representation of the at least one analog signal to a specified point.

Claim 16 (Original): The method of claim 1, wherein the displaying step also displays high-level interface information derived from the decoded symbols with the representation of the at least one analog signal in a correlated fashion.

Claim 17 (Original): The method of claim 16, further comprising searching the high-level interface information for preselected symbol information.

Claim 18 (Original): The method of claim 16, further comprising triggering storage of the set of data samples based upon matching all or part of preselected symbol information with the high-level interface information.

Claim 19 (Original): The method of claim 18, wherein the triggering step also repositions the high-level interface information and the representation of the at least one analog signal to a specified point.

Claim 20 (Original): The method of claim 1, wherein the displaying step also displays at least one clock location with the representation of the at least one analog signal in a correlated fashion.

Claim 21 (Original): An electronic device employing the method of claim 1.

Claim 22 (Original): A system for displaying digital interface symbol information from at least one analog signal, the digital interface symbol information including encoded symbols and decoded information, the system comprising:

means for capturing a set of data samples of the at least one analog signal at a frequency at least as high as the switching rate of the at least one analog signal;

means for converting the set of data samples into at least one serial bit stream using a clock;

means for searching the at least one serial bit stream for one or more sync symbols;

means for identifying the encoded symbols in the at least one serial bit stream using the sync symbols; and

means for displaying at least some of the digital interface symbol information with a representation of the at least one analog signal in a correlated fashion.

Claim 23 (Original): The system of claim 22, further comprising means for decoding the encoded symbols into the decoded information.

Claim 24 (Original): The system of claim 22, wherein the frequency of the capturing means is at least eight times as high as the switching rate of the at least one analog signal.

Claim 25 (Original): The system of claim 22, further comprising means for recovering the clock from the at least one analog signal, the clock being an electronic signal.

Claim 26 (Original): The system of claim 22, further comprising means for recovering the clock from the set of data samples, the clock being a list of locations in time relative to the set of data samples.

Claim 27 (Original): The system of claim 22, wherein the digital interface symbol information displayed by the displaying step are encoded symbols.

Claim 28 (Original): The system of claim 23, wherein the digital interface symbol information displayed by the displaying step is decoded information.

Claim 29 (Original): The system of claim 22, wherein the encoded symbols comprise 10-bit symbols of an 8b/10b encoded interface.

Claim 30 (Original): The system of claim 23, wherein the decoded information comprises 8-bit data values and command codes of an 8b/10b encoded interface.

Claim 31 (Original): The system of claim 22, further comprising means for searching the digital interface symbol information for preselected symbol information.

Claim 32 (Original): The system of claim 22, further comprising means for triggering storage of the set of data samples based upon matching all or part of preselected symbol information with the digital interface symbol information.

Claim 33 (Original): The system of claim 32, wherein the triggering means also repositions the digital interface symbol information and the representation of the at least one analog signal to a specified point.

Claim 34 (Original): The system of claim 22, further comprising means for displaying high-level interface information derived from the decoded symbols with the representation of the at least one analog signal in a correlated fashion.

Claim 35 (Original): The system of claim 34, further comprising means for searching the high-level interface information for preselected symbol information.

Claim 36 (Original): The system of claim 34, further comprising means for triggering storage of the set of data samples based upon matching all or part of preselected symbol information with the high-level interface information.

Claim 37 (Original): The system of claim 36, wherein the triggering means also repositions the high-level interface information and the representation of the at least one analog signal to a specified point.

Claim 38 (Original): The system of claim 22, wherein the means for displaying also displays at least one clock location with the representation of the at least one analog signal in a correlated fashion.

Claim 39 (Original): A system for displaying digital interface symbol information from at least one analog signal, the digital interface symbol information including encoded symbols and decoded information, the system comprising:

 a data sampler configured to capture a set of data samples of the at least one analog signal at a frequency at least as high as the switching rate of the at least one analog signal;

 a data converter configured to convert the set of data samples into at least one serial bit stream using a clock;

 a synchronizer configured to search for one or more sync symbols in the at least one serial bit stream for one or more sync symbols, and identify the encoded symbols in the at least one serial bit stream using the sync symbols; and

 a display engine configured to display at least some of the digital interface symbol information with a representation of the at least one analog signal in a correlated fashion.

Claim 40 (Original): The system of claim 39, further comprising a decoder configured to decode the encoded symbols into the decoded information.

Claim 41 (Original): The system of claim 39, wherein the frequency of the capturing means is at least eight times as high as the switching rate of the at least one analog signal.

Claim 42 (Original): The system of claim 39, further comprising a clock recoverer configured to recover the clock from the at least one analog signal, the clock being an electronic signal.

Claim 43 (Original): The system of claim 39, further comprising a clock recoverer configured to recover the clock from the set of data samples, the clock being a list of locations in time relative to the set of data samples.

Claim 44 (Original): The system of claim 39, wherein the digital interface symbol information displayed by the displaying step are encoded symbols.

Claim 45 (Original): The system of claim 40, wherein the digital interface symbol information displayed by the displaying step is decoded information.

Claim 46 (Original): The system of claim 39, wherein the encoded symbols comprise 10-bit symbols of an 8b/10b encoded interface.

Claim 47 (Original): The system of claim 40, wherein the decoded information comprises 8-bit data values and command codes of an 8b/10b encoded interface.

Claim 48 (Original): The system of claim 39, further comprising a search/trigger engine configured to search the digital interface symbol information for preselected symbol information and trigger storage of the set of data samples based upon matching all or part of preselected symbol information with the digital interface symbol information.

Claim 49 (Original): The system of claim 48, wherein the search/trigger engine also repositions the digital interface symbol information and the representation of the at least one analog signal to a specified point.

Claim 50 (Original): The system of claim 39, further comprising a display engine configured to display high-level interface information derived from the decoded symbols with the representation of the at least one analog signal in a correlated fashion.

Claim 51 (Original): The system of claim 50, further comprising a search/trigger engine configured to search the high-level interface information for preselected symbol information and trigger storage of the set of data samples based upon

matching all or part of preselected symbol information with the high-level interface information.

Claim 52 (Original): The system of claim 51, wherein the search/trigger engine also repositions the high-level interface information and the representation of the at least one analog signal to a specified point.

Claim 53 (Original): The system of claim 39, wherein the display engine also displays at least one clock location with the representation of the at least one analog signal in a correlated fashion.